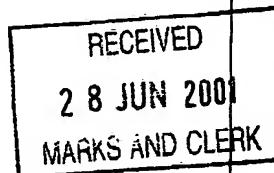


# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT  
(PCT Rule 71.1)

Date of mailing  
(day/month/year) 26.06.2001

Applicant's or agent's file reference  
DTP.P50978PC

## IMPORTANT NOTIFICATION

International application No.  
PCT/GB00/00726

International filing date (day/month/year)  
01/03/2000

Priority date (day/month/year)  
02/03/1999

Applicant  
WEATHERFORD/LAMB, INC. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

#### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

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**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**  
**(PCT Article 36 and Rule 70)**

Applicant's or agent's file reference  DTP.P50978PC	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No.  PCT/GB00/00726	International filing date (day/month/year)  01/03/2000	Priority date (day/month/year)  02/03/1999
International Patent Classification (IPC) or national classification and IPC  E21B33/08		
Applicant  WEATHERFORD/LAMB, INC. et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 8 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 1 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the report</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input checked="" type="checkbox"/> Certain defects in the international application</li> <li>VIII <input checked="" type="checkbox"/> Certain observations on the international application</li> </ul>		

Date of submission of the demand  18/09/2000	Date of completion of this report  26.06.2001
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Str mmen, H  Telephone No. +49 89 2399 7345



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**I. Basis of the report**

1. With regard to the elements of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, pages:**

1-12 as originally filed

**Claims, No.:**

1-19,21-27 as originally filed

20 as received on 18/05/2001 with letter of 15/05/2001

**Drawings, sheets:**

1/11-11/11 as originally filed

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

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the description,      pages:  
 the claims,      Nos.:  
 the drawings,      sheets:

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)      Yes: Claims 1-27  
                    No: Claims

Inventive step (IS)      Yes: Claims  
                    No: Claims 1-27

Industrial applicability (IA)      Yes: Claims 1-27  
                    No: Claims

2. Citations and explanations  
see separate sheet

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
see separate sheet

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
see separate sheet

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Reference is made to the following documents:

- D1: US-A-5 662 181
- D2: US-A-3 638 721
- D3: US-A-4 626 135

**Re Item V**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

V-1 D1, which is considered the closest prior art, describes an apparatus comprising:

- an element (6)
- a housing (8) disposed on the top of said element (6), said housing (8) having a first housing opening (9) and an internal diameter, said first housing opening (9) being sized to discharge drilling fluid received from said element (6);
- a bearing assembly (41) having an inner member (43) and an outer member (42) and being removably positioned with said housing (claim 1, l. 5), said inner member (43) being rotatable relative to said outer member (claim 1, l. 8-12) and having a passage through which the rotatable tubular may extend (claim 1, l. 6-7);
- a seal (38) movable with said inner member (43) to sealably engage the tubular (claim 1, l. 18-22); a quick disconnect member to disconnect said bearing assembly from said housing (col. 6, l. 58-66).

The apparatus according to claim 1 differs from said known riser in so much:

- a) the apparatus is for use with a structure for drilling in the floor of an ocean using a rotatable tubular and drilling fluid when the structure is floating at a surface of the ocean;
- b) the "element" is a riser fixable relative to the floor of the ocean, a portion of said riser extendable between the floor of the ocean and the surface of the ocean, said riser having a top, bottom and an internal diameter;
- c) the floating structure is movable independently of said bearing assembly when said tubular is sealed by said seal and the tubular is rotating.

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The apparatus according to claim 1 is therefore new and the claim meets the novelty requirement of Art. 33(2) PCT.

V-2 D1 does not specify whether the blow-out preventer is to be used onshore or offshore, and therefore it can be expected that it is substantially suitable for both applications. No inventive step is involved in adapting it to an offshore use.

However, as soon as the device of D1 is used offshore the "element" will be a riser as specified in the distinguishing feature b), and also the other use features a) and c) will be automatically present.

The distinguishing features a), b) and c) do not involve therefore an inventive step and claim 1 does not meet the inventive step requirement of Art. 33(3) PCT.

V-3 Standard flange dimensions are normally used in the industry to connect pipes. The flanges are welded to the pipes to be connected and then the connection is made up by bolting flange to flange with a seal ring in between the flange faces. D1 discloses a flange (see fig. 3, item 6) which obviously is designed to be connected to a compatible flange of a further element, and it would be most surprising if the internal diameters of the further element would be different from the one of the flange. As soon as the further element is a riser, the riser would have therefore the same internal diameter of housing 8 of D1.

Therefore, claim 2 does not involve an inventive step (Art. 33(3) PCT).

V-4 Furthermore, D1 discloses the subject-matter of claims 3 (see col. 5, l. 63-67) and 5 (see col. 3, l. 46-48), and therefore it would be obvious to implement said features together with the remaining features of D1. Therefore, the subject-matter of claims 3 and 5 does not involve an inventive step (Art. 33(3) PCT).

V-5 The "rupture disk" of claim 4 is merely functioning as a standard valve set to open at a certain pressure. The feature of having a destructive device which can only be used once is not considered to involve an inventive step (Art.

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33(3) PCT).

V-6 The additional feature specified in claim 6 is routinely used in the field, see for example D2, col. 2. 5-8. As it is apparent that the advantages of said solution would be present also applied in combination with the device of claim 1, claim 6 does not meet the inventive step requirement of Art. 33(3) PCT.

V-7 Based on the same argumentation as used under section V-1, V-2 and V-6, also the subject-matter of claim 7 does not meet the inventive step requirement of Art. 33(3) PCT.

V-8 The objections raised to claim 1 and 7 apply also to independent method claims 19 and 24, such that the subject-matter of said claims does not involve an inventive step contrary to the requirements of Art. 33(3) PCT.

V-9 The features of the following claims are known from either D2 or D3. It would therefore be obvious to combine said features with D1 in order to solve the problem posed:

Claim 8: see D3, col. 3, l. 27-28.  
Claim 9-11: see D3, col. 1, l. 49-54.  
Claims 12-14 see D3, fig 2.  
Claim 15: see D3, fig. 2, item 56.  
Claims 17-18: see D2, col. 1, l. 14-18.  
Claim 22: see D2, fig 2.

Therefore, the above mentioned claims do not involve an inventive step (Art. 33(3) PCT).

V-10 Claims 16 and 23 are not clear, see section VIII-1 of this Written Opinion. As an inventive step can be seen only in features which, on top of being not obvious, solve a technical problem, the mere statement of an objective cannot be considered as involving an inventive step. Claims 16 and 23 therefore do not meet the inventive step requirement of Art. 33(3) PCT.

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V-11 With respect to method claims 20 and 21, the same argumentation applies as used for claims 6 and 2, respectively.

Therefore, claims 20 and 21 do not involve an inventive step (Art. 33(3) PCT).

V-12 With respect to method claims 25-27, the same argumentation applies as used for claims 17-18, respectively.

Therefore, claims 25-27 do not involve an inventive step (Art. 33(3) PCT).

**Re Item VII**

**Certain defects in the international application**

VII-1 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

VII-2 The Independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (D1) being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

VII-3 To satisfy the conciseness requirement of Article 6 PCT, the present set of claims should include only the minimum necessary number of independent claims in any one category. Said requirement is not satisfied by independent claims 1, 7, 19 and 24, as in the present case, it is considered appropriate to use only one independent claim in any one category.

**Re Item VIII**

**Certain observations on the international application**

VIII-1 Since it is not clear how vertical movements are compensated for when the slip joint in claims 16 and 23 is removed, said claims do not meet the requirements of Art. 6 PCT in that the matter for which protection is sought is

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not clearly defined. The claims attempt to define the subject-matter in terms of the result to be achieved which merely amounts to a statement of the underlying problem. The technical positive features necessary for achieving this result should be added. See also PCT Guidelines PCT/GL/3 III-4.11.

rotating the tubular within the housing and the riser while maintaining a seal between the tubular and the housing;

communicating the pressurized drilling fluid from the housing to the structure, and

compensating for the relative movement of the structure and the housing during the step of communicating.

20. A method as claimed in claim 19, further comprising the step of:

attaching a flexible conduit between an opening of the housing and the floating structure for the step of compensating for the relative movement of the structure and the housing.

21. A method as claimed in claim 19 or 20, further comprising the step of:

removing a bearing assembly from the housing whereby the housing internal diameter is substantially the same as the riser internal diameter.

22. A method as claimed in claim 19, 20 or 21, further comprising the step of:

lowering the housing through a deck of the structure during the step of positioning the housing on the riser.

23. A method as claimed in claim 19, 20, 21 or 22, wherein the step of compensating is independent of a slip joint.

24. A method for communicating drilling fluid from a casing fixed relative to an ocean floor to a structure floating at a surface of the ocean while rotating within the casing a tubular, comprising the steps of:

positioning a housing on a first level of the floating structure and sealingly attaching the housing to the casing;

allowing the housing to move independently of said floating structure;

sealingly positioning the tubular with the housing so that the tubular extends through the housing and into the casing;

pressurizing the drilling fluid to a predetermined pressure as the fluid flows into the tubular;